

Bee's Wax

Objective

Students will complete a pattern of hexagons to understand what a honeycomb looks like.

Background

Honeybees have special body parts for making wax. Beeswax comes out in white flakes from glands under the bee's abdomen. The glands degenerate in older worker honey bees, so most wax is made by young worker bees. The wax is white at first but gradually turns a golden color.

The honeycomb is made up of six-sided cells. In the wild, the honeycomb is made from beeswax. This wax turns a rich chocolate brown or black. Commercial beekeepers provide honeycombs made of other materials. The bees use the honeycomb for storing food and protecting the queen's eggs. After they fill the cells with honey, they cap them with wax.

About 8 million pounds of beeswax is used in the US each year. People use beeswax to make candles, lipsticks, lotions, shoe polish, crayons, chewing gum, and floor wax. In the past sculptors used bleached bee's wax to hide mistakes in their sculptures. The best sculptors were proud to say their statues were "sine cera," or without wax. That is where we get the word "sincere."

Procedures

1. Provide copies of the student worksheet for students to complete.
 - Students will draw lines to complete the missing cells in the frame.
 - Students will estimate how many cells are in the frame and record their guesses on their worksheets.
 - Students will count the cells and record the actual number in the blank provided.

Maker Space

1. Discuss structures and provide assorted materials for students to use to build honeycomb-like structures with six-sided cells.
2. Students will try building honeycombs using cells with different number sides and determine which works best and why.
3. Find instructions online for making a 3-D hexagon. Students will each make at least one hexagon. Students will put all the hexagons together to form a honeycomb.

Oklahoma Academic Standards

GRADE 1

Number & Operations: 1.4.
Geometry: 1.1,2,3

GRADE 2

Geometry: 1.1,3

GRADE 3

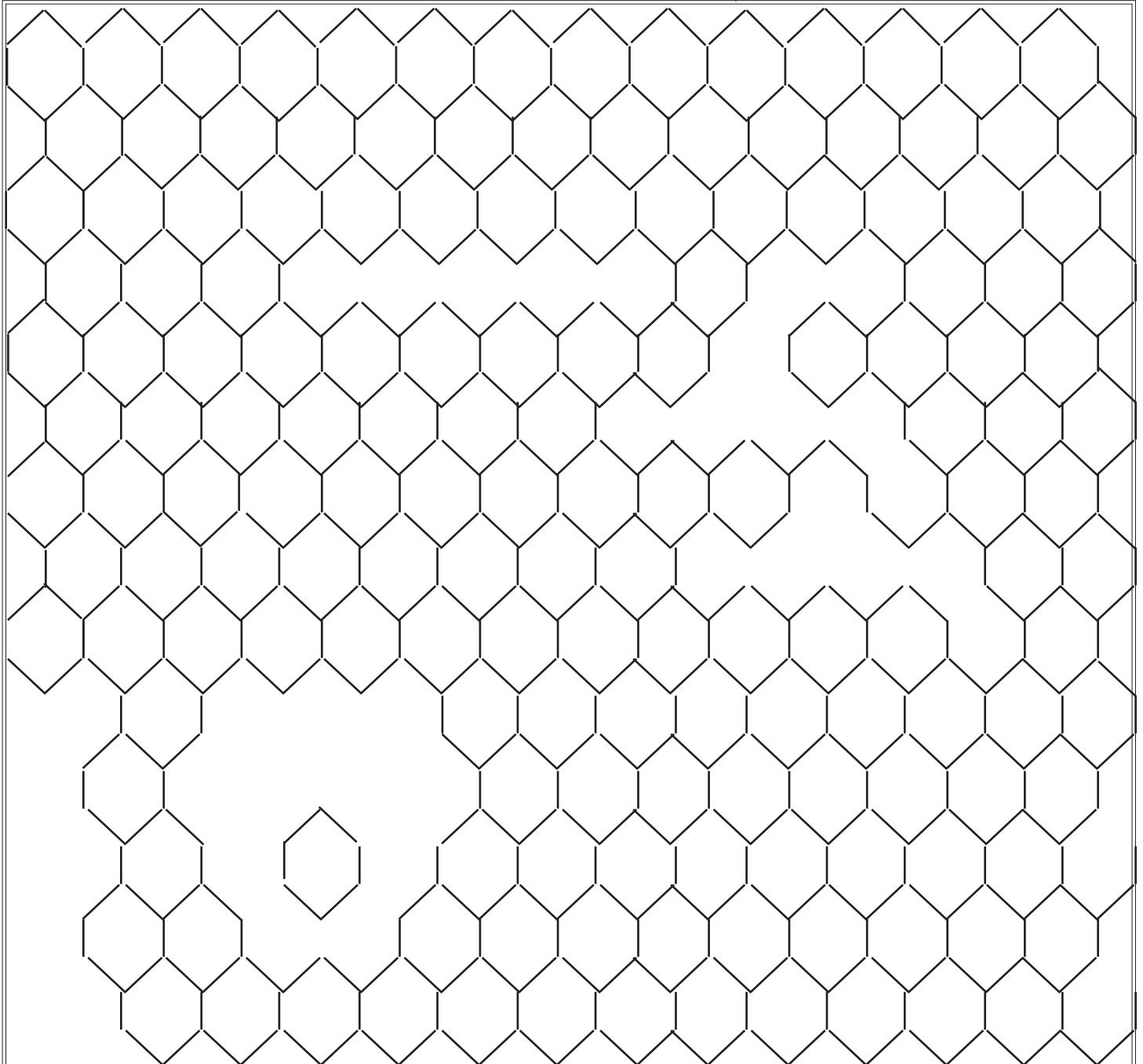
Number & Operations: 2.1,5,7

Materials

Assorted materials for students to design honeycombs—
popsicle sticks, straws, etc.

Bees Wax

Complete this frame of hexagons. Estimate how many cells make up this honeycomb, then count the cells.



Estimated number _____

Actual number _____



Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.